Grid computing

Grid Computing Grid computing is a form of peer-to-peer computing which allows the organizations and enterprises to take advantage of distributed processing. The special software used reclaims unused computing cycles on desktop computers and harness them into a " virtual supercomputer" (Laundon and Laundon 192). The problem processed is broken down into many small pieces which are processed independently on many separate machines in the network.

Grid computing enables organizations to share computing and information resources across department and organizational boundaries in a secure, highly efficient manner (Global Grid Forum n/p). With its help the organizations are able to utilize underused CPU capabilities within the network, avoid unbalanced capabilities, and virtually lift the constraints imposed by the capability of a particular CPU. Grid computing becomes an access gate to the on-demand computing meaning the processing and storage capacity is used when it is needed. It allows processing large workloads more quickly without " stealing" the capacity from other viable tasks running simultaneously.

Grid Computing Info Center compares the underlying idea of grid computing to electric power network (grid) where power generators are distributed, but the users are able to access electric power without bothering about the source of energy and its location (Grid Computing Info Center n/p).

The major providers of the grid computing software include IBM, Oracle, Intel, Infosys, SAS, Sun Gridware. A number of the companies specializing in grid computing software offer their solutions to a wide range of corporations as well: Grid Frastructure, Gridwise Tech, Gridwell, Gridsystems, etc. (Grid Computing Info Center n/p).

Often the software offers are adapted to suit the needs of a particular industry or company. For instance, IBM's Grid and Grow solutions offer the organizations a wide variety of customized platforms. The software is tailored to the individual needs of each of the nine key industries and five core business and technology areas in order to achieve higher customer satisfaction.

Grid computing is extensively useful in the computation-intensive areas: research and development, data base management, analytics, just to name a few. For example, hundreds of engineers at Pratt & Whitney use grid computing to perform complex computations that stimulate air flow through jet engines and test stress on materials, running their jobs on a computational " grid" consisting of 8, 000 computer chips inside 5, 000 workstations in three different cities (Ricadela cited in Laundon and Laundon). Grid computing is subject to the network externalities meaning that the larger the network gets, the more beneficial it is for the participants. Most computers in the grid have underused CPU capacity because, according to numerous researchers, most of the companies and individuals use less than 25 percent of the available processing capacity (Laundon and Laundon 192).

Another example of the successful implementation of grid computing is the World Community Grid initiative launched by one of the leading providers of the grid computing software, the IBM Corporation. The voluntary-based grid allows scientific research institutions and expert groups to streamline the complex computations aimed at resolution of the contemporary scientific challenges and benefiting the community. The undergoing endeavors include the FightAIDS@Home project, the Human Proteome project and many more.

The IBM grid has proven to be effective. For instance, in 2003, with grid computing, in less than three months scientists identified 44 potential treatments to fight the deadly smallpox disease. Without the grid, the work would have taken more than one year to complete. (IBM World Community Grid n/p)

Works Cited:

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